

Initial Report to the Governor

Causes of the 2000-2001 Winter Energy Crisis

By the Missouri Energy Policy Task Force

(March 1, 2001)

In his February 8 message to the Energy Policy Task Force, Governor Bob Holden requested that it conduct a quick examination of this winter's energy cost crisis and provide an initial report by March 1. The Task Force conducted its first meeting in Jefferson City on February 16. Based upon its collective knowledge, as well as information surveyed by individual members, the Task Force submits this report.

Synopsis:

The sudden rise in the price of natural gas and propane, the heating fuels used by most Missourians, was caused by the combined effect of four major factors: (1) a slow rate of supply growth caused by reduced exploration for natural gas and below average national storage levels at the beginning of the winter heating season¹; (2) the increased demand for natural gas caused by the evolution of the gas market from one that formerly served the winter heating season to one where natural gas is used year round; (3) extremely cold weather in November and December which sent demand soaring for both fuels; and (4) the manner in which current regulatory practices in Missouri pass through gas costs to consumers. There is no credible evidence at the present time that the sudden rise in prices was caused by unlawful conduct.²

Report:

The constraints in supply, increase in demand, and cold weather have combined in prior years to spike natural gas and propane prices, most recently during the winter of 1996-97. However, this season's unprecedented price increases can be traced to complex supply and demand factors, as well as the manner in which consumers pay for these fuels.

A. Slow Rate in Supply Growth

1. Reduced Exploration

Over the past ten years or so, the price of natural gas at the well-head has generally been moderate to low. While there were occasional price spikes in the past decade, the return that producers were earning on their investment was apparently not sufficient for them to expand their natural gas exploration and production (E&P) facilities.

Mild winters experienced across much of the nation during the latter half of the 1990's helped to keep the price of natural gas at the well-head depressed during that period. Therefore, certain natural gas production facilities closed down and exploration for new natural gas supplies was slowed. The industry mothballed many rigs and laid off operators and drillers, as well as geologists and engineers. The extended period of low natural gas prices had an adverse impact on E&P investment throughout the industry.³

Industry statistics reveal that in early 1999 there were 542 gas and oil rigs operating in the United States, and 331 in Canada, for a total North American figure of 873. Of the 542 domestic rigs, 425 were natural gas. In early 2000, these figures rose to 596 U.S. gas rigs, 742 total U.S. rigs, and 1,291 total North American rigs.

By 2001, the numbers continued to climb, although not as rapidly in Canada, when there were 1,706 North American rigs (903 U.S. gas rigs; 1,141 total U.S. rigs; and 565 Canadian rigs). ⁴ Attached as Exhibit 1 is a graph showing the natural gas rig counts for the United States, which has roughly paralleled the New York Mercantile Exchange (NYMEX) strip price of natural gas. ⁵

Today there is a shortage of about 1,000 rigs. Outside independent contractors that have been retained by the E&P companies in the meantime to meet the new demand are reportedly overextended themselves. ⁶ While the supply of natural gas itself is not in jeopardy, there are not sufficient production facilities in place today, and the producers themselves say it will take at least until 2002 to remedy this situation.

2. Below Average National Storage

Because the winter demand for natural gas often exceeds the actual supply of gas coming from the producers, gas is pumped into natural underground storage facilities for use during the cold months. This stored gas bridges the gap between consumer demand and the ongoing production of gas.

From April through October natural gas is injected into storage facilities for the upcoming winter. At the end of the 2000 storage injection season, the Energy Information Administration (EIA) of the U.S. Department of Energy estimated that 2,758 billion cubic feet (Bcf) of natural gas was in storage. According to the EIA, as of November 3, 2000, storage levels in the United States were at 83 percent of capacity. ⁷

Thus, when this winter started, natural gas storage facilities were not filled to capacity by the various components of the natural gas industry, from the E&P companies and the interstate gas pipelines to the local distribution utilities. In February the EIA estimated that the United States had 1,038 Bcf of natural gas in storage, which was 32.9 percent less than the 5-year average. ⁸

The below average national storage levels were caused by a number of factors. For example, some utilities balked at buying natural gas early last summer because prices initially spiked in May 2000. It is likely that certain entities storing natural gas believed that the price would decline during the last summer and early fall, and planned to make their purchases then. Another factor resulting in the below average national storage levels was the increased use of natural gas in the generation of electricity.

3. Propane

Propane faced a somewhat different situation. Through October 2000 propane supplies were adequate and production remained strong. However, national propane production began to fall, particularly later in the year. The EIA reported that production in the Gulf Coast region fell by nearly one-third from the end of November to mid-January. This occurred in part because of the rapid increase in natural gas prices which caused a decline in propane production facilities that use natural gas as an operating fuel. ⁹

B. The Increase in Demand for Gas

The demand for natural gas in the United States has increased dramatically over the last several years. Two major factors were responsible for this increased natural gas demand.

First, electric utilities have increasingly turned to natural gas as the fuel of choice to generate power. Natural gas was a cheap and abundant domestic source of fuel. It was preferred to the burning of coal, which was costly to transport and which produced greenhouse gases. It was preferred over nuclear power, which left its owners with hazardous waste to be treated and stored. As a result, when temperatures last summer remained high, electric generating units fueled by natural gas created an unprecedented demand for gas when prices were expected to fall due to lack of demand. Attached as Exhibit 2 is a graph depicting the projected increase in natural gas-fired electric generation in the United States, according to the EIA.

Second, exports increased. At the same time that domestic demand failed to drop, international demand for gas increased. Last summer natural gas producers found higher prices for their product in Mexico and Canada. Exports from the United States in 2000 rose more than 45 percent from 1999. Mexican purchases of U.S. gas rose by 30 Bcf, while U.S. imports from Mexico fell by 40 Bcf. ¹⁰

C. Cold Weather

While this winter was predicted to be colder than the previous warm winters, severe cold weather struck the midwest early in November and continued through the end of 2000. On January 5, 2001 the National Weather Service reported that the last two months of the year were the coldest on record for much of the United States. Significantly, the State of Missouri, along with Oklahoma and Arkansas, experienced an all-time record cold for that period.

As a result of the unusually cold winter across the country, not just in Missouri, there was increased demand for natural gas and propane, and the prices of natural gas at the well-head increased substantially. At the same time consumers were using more natural gas to heat their homes.

With respect to propane, the Energy Information Administration reported that while propane had experienced a five percent decline in demand through November 2000, the sustained cold weather in December prompted demand for the final month of the year to rise substantially. Prices accordingly rose to record levels as well.¹¹ It should also be noted that slightly warmer than normal temperatures in mid-February led to a moderation of price for both fuels, which should be reflected in consumer bills.

D. Legal & Financial Issues

The legal framework in which the energy industry operates permits price fluctuations in natural gas and propane. At present there are no price controls on either fuel at the federal level.

The price of natural gas as a commodity was deregulated beginning in the late 1970's, mainly as a response to the Arab oil embargo and the energy crisis which followed. All price controls were finally removed with the passage of the Wellhead Decontrol Act of 1989. Rates pertaining to the interstate transportation of gas are regulated by the Federal Energy Regulatory Commission (FERC). The Missouri Public Service Commission (PSC) regulates the rates of the local investor-owned utilities, known in the industry as local distribution companies or LDC's. ¹²

At the state level, the cost of the gas incurred by the LDC is passed directly to consumers through a PSC mechanism known as the Purchased Gas Adjustment. The PGA portion of a consumer's bill also includes the local utilities' cost to transport and store the natural gas from the well-head to the ultimate user. Tariffs currently in effect at the Public Service Commission permit an LDC to change its PGA once in the summer, once in the winter, and on one unscheduled occasion,

presumably to reflect rising or falling prices.¹³ An LDC's conduct in procuring the gas is subsequently audited by the PSC, and the costs charged to consumers are subject to adjustment and refund.

Propane has always been an unregulated commodity, much as gasoline and refined oil are. Neither FERC nor the PSC have any jurisdiction over propane sales or prices.

It should also be mentioned that the financial markets play a role in the setting of prices. The price of natural gas is influenced by the futures market, particularly the New York Mercantile Exchange. Many contracts for gas and other commodities have their prices linked to the commodity exchanges. As the financial markets react to perceptions of supply and demand, as well as politics and the weather, prices rise and fall.

Finally, the degree to which natural gas and propane market participants manage their price risks through financial hedging and other tools will affect the price consumers pay. While risk cannot be completely eliminated, price volatility can be moderated through such programs. The failure of local utilities and propane dealers to manage such risk probably contributed to the unprecedented price spikes.

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¹ Traditionally in Missouri the months of November through March have been considered the winter heating season.

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² Attorney General Nixon came to a similar conclusion in his report to the Governor of February 26, 2001.

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³ Natural Gas Distribution September 2000 Quarterly Report, Merrill Lynch & Co. (Oct. 13, 2000).

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⁴ "Better Policies Would Decrease Possible Shortages," Robert J. Allison, Jr., Natural Gas (Jan. 2001); Presentation of Barbara Mariner Volpe (U.S. Energy Administration) to Illinois Commerce Comm'n, Jan. 24, 2001 (www.eia.doe.gov).

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⁵ "Observations on the Current Spiraling Wholesale Natural Gas Markets," Kenneth J. Neises, Laclede Gas Co., presented at the 4th Annual Midwest Energy Bar Assoc. Conference, Kansas City, Mo. (Feb. 8, 2001).

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⁶ Interview with Cabot Oil & Gas Corp. official (Feb. 23, 2001).

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⁷ EIA Natural Gas Weekly Market Update (Nov. 13, 2000).

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⁸ EIA Natural Gas Update (Feb. 22, 2001).

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⁹ "Propane - A Mid-Heating Season Assessment," EIA, DOE (Jan. 29, 2001); "The Near Term Outlook for U.S. Propane Supplies," Purvin & Getz (Feb. 5, 2001), commissioned by the National Propane Gas Assoc. (www.NPGA.org).

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¹⁰ "U.S. Natural Gas Suppliers Sell to Foreign Buyers as Domestic Prices Soar," David Ress, Knight-Ridder Tribune Business News (1/21/02).

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¹¹ EIA Natural Gas Weekly Market Update (Nov. 13, 2000).

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¹² There are seven LDC's in Missouri: Laclede Gas Co., Missouri Gas Energy (a division of Southern Union Co.), Fidelity Natural Gas, Inc., Southern Missouri Gas Co., L.C., AmerenUE, Atmos Energy Corp. (also operating through its Greeley Gas and United Cities Gas divisions), and Missouri Public Service and St. Joseph Light & Power (divisions of UtiliCorp United Inc.).

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¹³ As a result of this winter's natural gas price volatility, some LDC's filed applications in February to seek additional unscheduled changes in the PGA as a result of lower gas costs. The Attorney General's Report of February 26 discusses the operation of the PGA clause in more detail.

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